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The diffusion of e-participation in public administrations: A systematic literature review

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ABSTRACT

Research on e-participation has grown significantly in the last years. This review focuses on public administrations, which are central actors in the solicitation and organization of e-participation and in the process of diffusion of more democratic decision-making in government contexts. However, research indicates that public administrations often struggle with technological and organizational changes, which suggests that e-participation initiatives may fail due to barriers within public administrations. Although researchers have paid considerable attention to the diffusion of e-participation in public administrations, research so far is multi-disciplinary and fragmented. The aim of this literature review is to structure and systematize the literature regarding phases of e-participation diffusion (adoption, implementation and institutionalization) and levels of analysis (micro, meso, and macro) to map the extant field of e-participation diffusion research and to provide a starting point for future research. The analysis shows that research has concentrated on the phases of adoption and implementation, and on the external context of public administrations (macro) and the organizational (meso) level. Overall, the review identifies major research gaps and offers avenues for future research.

KEYWORDS

E-participation; public administration; diffusion; adoption; implementation; institutionalization; literature review

Introduction

In the last two decades, e-participation, i.e., citizens' participation in public decision-making and service provision via information and communication technologies (ICTs) (Susha and Grönlund 2012), has become an important topic. Governments around the world adopted e-participation practices to increase citizens' involvement in and the transparency of governmental decisions (United Nations 2014). Thereby, they aim to restore legitimacy of and trust in government bodies through democratic engagement (Medaglia 2012).

Public administrations play a key role in the development of top-down opportunities for e-participation in political processes (Medaglia 2012, 351). Although political actors often start initiatives for greater citizen participation via ICTs, public administrations often happen to be the *birthplace* and *locus* of participation processes because they have the organizational means to realize them (Peters 2010, 210; Klages 2015, 7). Usually, they are responsible for organizing and managing online opportunities and other communication channels with which citizens can engage in the political arena (Welch and Feeney 2014; Gil-Garcia 2012, 15–16). However, scholars stress that public administrations struggle with the provision of e-participation opportunities and only introduced it to a limited degree (Norris 2010). A main reason for the struggles is that the diffusion – the spread of innovations such as ICTs or new policies within a social system (Rogers 2003, 5) – of e-participation within public administrations is challenging due to several factors: The diffusion of

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Supplementary material for this article can be accessed here.

technology-based innovations, such as e-participation, depends on an interplay of new technologies (such as social media) and the social systems (e.g., the public administration context with specific norms and rules) they are used in (e.g., Bekkers and Homburg 2005). Balancing such challenges often takes time and creates problems specific to the organizational context that need to be solved (Rogers 2003; Greenhalgh, Kyriakidou, and Peacock 2004, 97–103). Thus, because public administrations are main actors in the diffusion process of e-participation innovation, a thorough understanding of these organizations, their context, and position in society is necessary. Traditionally, the ideal-typical main task of bureaucratic public administrations has been to support political government actors and provide public services on a professional and legal basis. Since the advent of public management reforms, values of efficiency and performance-orientation additionally gained importance. The use of ICTs to support democratic values of deliberative engagement and participation further adds to this complexity (e.g., Bannister and Connolly 2014; Cordella and Bonina 2012). Furthermore, public administrations face specific challenges in diffusion processes. For example, political control, leadership and accountability towards citizens may make the diffusion of e-participation in public administrations even more complex (e.g., Zhang, Xiaolin, and Xiao 2014). Overall, the diffusion of e-participation in public administrations is challenging, which negatively affects the provision of e-participation opportunities.

Due to the central role of public administrations in the provision of e-participation, researchers have paid considerable attention to public administrations and their role in the development of e-participation (Gil-Garcia, Dawes, and Pardo 2017). While these studies have contributed to a better understanding of the role of public administrations, it also creates challenges for researchers: First, it becomes difficult for researchers to keep pace with the rapid growth of the body of knowledge (Medaglia 2012; Sæbø, Rose, and Flak 2008; Susha and Grönlund 2012). Second, e-participation research is a fragmented field that has connections with various disciplines, including public administration, organization studies, communication and media studies, political science, and information systems research (Macintosh, Coleman, and Schneeberger 2009; Sanford and Rose 2007). As a result of the fragmentation, a common/shared terminology has not formed, which makes it difficult to get a coherent overview of the current body of knowledge. Despite the existence of reviews on e-participation (e.g., Medaglia 2012; Sæbø, Rose, and Flak 2008), smart governance (Meijer and Bolívar 2016) or social media in government (Medaglia and Zheng 2017), there is no review that focuses on the challenges public administrations face during the process of e-participation diffusion. As a result, it remains difficult for researchers and administrators to build on prior studies and to comprehend current knowledge on the diffusion of e-participation in public administrations.

Against this background, the aim of this study is to provide a systematic, cross-disciplinary literature review of research on the diffusion of e-participation in public administrations. Therefore, this review will conflate and accumulate knowledge about e-participation in the complex social system of public administrations from diverse perspectives. We will map the existing knowledge, which will help to systematize research and to identify relevant research gaps. This will help scholars to position future research in the field. Particularly, the systematic literature review will answer two research questions:

RQ1: What are the main topics and areas of research about the e-participation diffusion process in public administrations?

Conclusions drawn from the resulting insights can highlight important streams of investigation and gaps in the field, so we also contribute to the development of a research agenda by additionally focusing on the question:

RQ2: What aspects of the diffusion of e-participation in public administrations should future research focus on?

The diffusion of e-participation in public administrations

E-participation and public administration

E-participation refers to the active participation of citizens throughout the policy cycle via ICTs. In addition to forms of direct and representative democracy (e.g., e-voting), e-participation aims to facilitate transparent information and participation processes, top-down offers for joint decision-making, and better responsiveness to bottom-up citizen inquiries (Macintosh 2004). Public administrations play a crucial role in the provision of e-participation. However, research showed that the diffusion of ICTs, such as e-participation, in public administrations is a complex task that challenges these organizations in at least two ways (Bekkers and Homburg 2005). First, this process is a technological challenge. New technologies introduce possibilities and limitations for administrations to choose or develop approaches that suit their needs. For example, researchers and policy-makers assume that functionalities of social media tools, such as interactivity or transparency, are suitable and conductive for participatory use (Bertot, Jaeger, and Grimes 2010). Thus, public administrations need technological capabilities and resources to introduce new technologies. Second, researchers argued that expectations for e-participation in engaging citizens into political processes and restoring governments' legitimacy are often overly optimistic (Susha and Grönlund 2012, 379). The reason is that ICT tools do not represent objective technologies and that they transport new values and norms that need to diffuse – get evaluated, interpreted, re-designed, and used – in specific contexts (e.g., Fountain 2001). Thus, diffusion processes depend on both technological factors and on social, institutional and organizational factors (Norris 2003). This requires to develop a detailed understanding of the social and organizational contexts of stakeholders like public administrations to understand how technology-based practices (e.g., e-participation) and organizations develop in interdependence (Sandoval-Almazan and Gil-Garcia 2016; Wiredu 2012).

Analytical framework

To systematize the literature, we develop an analytical framework that is broad enough to include studies from different academic fields and sufficiently detailed to systematize diffusion research. We developed the framework in two steps: In the first step, we reviewed research on the diffusion of innovations (Rogers 2003), ICTs (Cooper and Zmud 1990; Damanpour and Schneider 2006), and (management) practices and ideas (e.g., Ansari, Fiss, and Zajac 2010) to identify the most important stages in the diffusion process. Although each discipline uses different labels to refer to the stages, we identified three stages that were highlighted in almost all diffusion frameworks: The first stage, *adoption*, describes the process in which organizations become aware of and learn about ICTs; gather information to evaluate the potential benefits (e.g., technical and financial benefits); and make the decision whether to acquire ICTs (Damanpour and Schneider 2006; Rogers 2003).

The second stage, *implementation*, is defined as the integration of innovations into organizational processes and structures (Rogers 2003). The implementation stage encompasses the installation and delivery of ICTs within an organization (Lai and Mahapatra 1997); the diffusion of ICTs among users within an organization; the adaptation of organizational procedures and processes to the new ICTs (Cooper and Zmud 1990), and the adaptation of ICTs to existing structures (Wiredu 2012). Therefore, the implementation stage highlights the newness and experimental status of ICTs and the need to consider processes of adaptation (e.g., Leonardi 2007), translation (e.g., Kornberger et al. 2017), or enactment (Fountain 2001).

The third stage, *institutionalization*, describes both a process and a state (see e.g., Tolbert and Zucker 1996). It refers to the process through which ICTs become a known and routinized activity within an organization. For instance, ICTs become integrated into organizational routines and structures (Norris 2003); and might finally reach a state of unquestioned repetition (Barley and Tolbert 1997). Thus, this stage describes the efforts to maintain or sustain the innovations (Rogers 2003, 428–30).

In the second step, we followed prior reviews on the diffusion of innovations (MacVaugh and Schiavone 2010) and introduced three levels of analysis to the framework: The *micro level*, which refers to actors (e.g., employees, managers) within an organization; the *meso level*, which includes the organization and its characteristics (e.g., organizational size, organizational culture, practices); and the *macro level*, which refers to the external environment of an organization and includes factors such as national culture, regulations, and societal norms. The distinction between the levels is important, because factors at different levels of analysis influence the process of diffusion, often simultaneously. For instance, studies have shown that societal factors (e.g., national culture; Erumban and de Jong 2006), organizational factors (e.g., firm size; Bayo-Moriones and Lera-López 2007), and individual factors (e.g., commitment or skills; Peansupap and Walker 2005) are associated with the adoption of ICTs. Therefore, the distinction allows us to provide a more comprehensive perspective on the diffusion of e-participation in public administrations. In summary, the analytical framework structures and systematizes studies based on the phases in the diffusion process and the level of analysis they address. Thus, the framework offers a broad approach which facilitates the integration of studies analyzing different aspects of organizational diffusion and will help to generate a more coherent perspective.

Method

Identification and selection of relevant articles

A systematic literature review can help to scope and provide an overview of a field of research to present the existing body of knowledge and to identify research gaps (Arksey and O'Malley 2005, 21–22) based on a rigorous method that ensures the transparency and reproducibility of the findings (Paré et al. 2015). Our systematic literature review consisted of two steps: (1) identification and selection of relevant literature and (2) content analysis.

Our approach to identify appropriate articles for the review follows previous reviews in the field of e-participation research (e.g., Susha and Grönlund 2012): First, we selected the sources of our literature review. We did not define a starting year for the search to get a broad overview of the field's development. We used Version 12 (released July 6, 2016) of the E-Government Reference Library (EGRL 2016), which covers the main peer-reviewed journals and conferences in the field of e-government. We downloaded the reference library and imported 8,181 titles to a literature-management tool to search the articles. We also searched for articles in EBSCO and Web of Knowledge (WOK), which also include a broad selection of journals from various disciplines.

Second, we defined keywords to ensure a transparent and replicable search process. We relied on multiple, often related search terms to identify relevant studies (see Appendix 1 for a list of keywords). The first set of keywords relates to e-participation. The second set of keywords refers to public administrations; and the third set is related to the adoption, implementation, and institutionalization of e-participation. At least one keyword from each set had to occur in the title, abstract, and/or keywords.

We followed a three-step approach to select relevant articles based on pre-defined selection criteria (see Table 1). First, one author reviewed the source and language of all articles that resulted from our search: We included peer-reviewed, English language articles. As of October 2016, we identified 444 hits from the three databases. After correcting the sample for duplicates, publications not written in English and non peer-reviewed articles, we were left with 351 publications. Second, one author reviewed the title and abstract of all articles using content-related selection criteria: (1) Is the study an original (i.e., conceptual or empirical) research article? (2) Is the study relevant to the research questions (i.e., does it focus on public administrations and e-participation)? After the initial coding, a second author independently coded 110 articles to test the reliability of the selection. The coders agreed in 85 percent of the cases. Both coders discussed the articles in which they disagreed to reach a consensus. With this shared understanding of the selection criteria in mind, the first coder

Table 1. Selection criteria for including articles in the review (see Dekker and Bekkers 2015).

Selection criteria for including articles in the review
1. English language Peer-review process
2. Original research (empirical and theoretical contributions; excluding editorials, reviews, comments etc.)
3. Relevance to the research questions, excluded were articles:
* not specifically addressing public administration
* addressing digital government topics but not e-participation (open data, transparency, e-services, e-information etc.)
* addressing another context (e.g., health or social care or private sector)

went through all titles and abstracts and identified 205 articles that fulfilled the criteria. Third, one of the authors read the full texts of these articles. A total of 38 articles that did not fit our selection criteria on closer examination were excluded. Again, critical cases were discussed. The final sample consists of 167 publications (see Appendix 2).

Content analysis

We applied a multi-step approach for content analysis. First, we read all articles and classified their content into broader categories related to their main contributions: analytical/descriptive; interpretive causal explanations; positivist hypothesis testing; design/action research (see Bélanger and Crossler 2011) and methods (quantitative/qualitative/mixed/conceptual), the ICT-tools analyzed, and the administrative level and the geographical focus of the article (see supplementary material). This helped us to provide insights into the extent, range, and nature of the field of research (Arksey and O'Malley 2005).

Second, one author systematized and charted the results by applying our analytical framework. We tested the coding scheme on the basis of ten articles that were independently coded by one of the authors and one research assistant who was not involved in the study. Through discussing the results, the coding author developed a better understanding of the categories, which helped to ensure a coherent coding (coding results can be found in the supplemental material). Overall, the categories helped us to extract relevant findings and systematize knowledge about how e-participation diffuses in public administrations in an overview excel sheet.

Third, one author conducted an inductive coding cycle based on the above categorization to ensure a coherent classification. This inductive process aimed to identify research areas and topics that further illustrate the development of the field (see RQ1). We looked at all three stages and levels, which results in a nine-field matrix. The inductive analysis and grouping of categories showed that the results can be divided into two categories: (1) factors affecting e-participation diffusion, which we denote as *barriers and facilitators*; and (2) research that considered the handling and shaping of e-participation (i.e., *strategies*). The latter refers to how organizations deal with e-participation in terms of barriers and facilitators, i.e., how they actively interpret and use e-participation (Meijer 2015). Thus, strategies highlight that diffusion is not a passive process. We scanned the literature in each cell (e.g., macro adoption or meso implementation research) and inductively identified specific areas of barriers and facilitators, and strategies. This process focused on the main framing, research questions as well as the empirical or conceptual results of the studies we summarized in the excel sheet before. Then, we went back and forth between our summary table and the original articles to identify the relevant categories and filled the fields of the analytical matrix. After a first coding cycle, the authors discussed the classification of the literature to reach consensus about ambiguous cases and the demarcation of categories. The coding author then again went through the sample to reach a coherent system of categories. Detailed tables that represent the results of this process including sub-categories can be found in Table 3–5.

Findings

General overview

The first studies on the diffusion of e-participation in public administrations were already published in the early 2000s (see Figure 1). However, more than 60 percent of the studies (N = 101) have been published between 2011 and 2014, which underlines the recent relevance of the topic. We can also see a drop in publications in 2015 and 2016, which hints at a normalization of research output after a hype between 2012 and 2014.

Most of the articles were published in journals and conference proceedings related to e-government (e.g., *Government Information Quarterly, Information Polity, the dual eGov & ePart Conference*) and public administration (e.g., *Public Administration Review, Public Management Review*), but 61 journals appear only once confirming the fragmented status of the research field. Besides public administration and e-government outlets, 19 articles come from sources related to information systems research, such as Online Information Review, Information & Organization, or the Journal of Organizational Computing & Electronic Commerce.

The situation of public administrations (organization, structures tasks etc.) can strongly vary among geographic areas and tasks differ regarding the administrative level (from local government to transnational units like the EU). An analysis of the geographic foci of the studies in the sample highlights a strong focus on Europe (N = 74 articles; aggregated number), the United States (N = 39), and China (N = 11), which make up about three-quarters of all articles. Interestingly, there are almost no studies about e-participation diffusion in countries in Africa or South America, which highlights a significant gap.

Regarding the administrative level, the diffusion of e-participation has been mostly researched at the local (N = 86) and the national level (N = 47). Researchers often argued that the local level is very important because it directly affects the living environment of citizens. The national level has been researched in several studies based on e-participation activities of national government agencies or on the UN e-participation index that offers worldwide and easily accessible secondary data about the adoption of e-participation by national governments.

Although ICTs diffuse in specific contexts, it is important to consider the technological basis of e-participation. Because of the large variety of ICTs analyzed in the articles, we tried to group them regarding their conceptualization and operationalization. Interestingly, we found that a large number (N = 34) of articles does not specify the technologies that can facilitate e-participation. Of the remaining studies, many focus on broad sets of e-participation tools that enable interactive communication; yet, these studies do not take specificities of the systems into account. Those – primarily

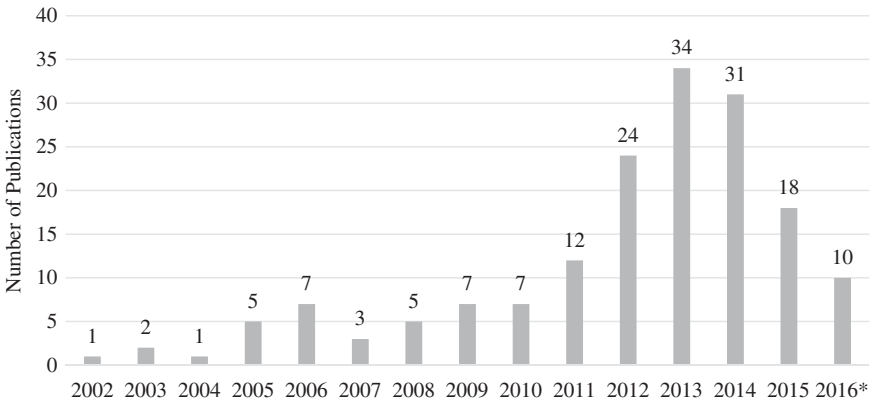

Figure 1. Number of publications per year (* until 10/5/2016).

descriptive or conceptual – studies have been categorized as research regarding "social media tools" (N = 25), using social media as an umbrella term for technologies that enable digital interaction. A second group of less specific articles examined the availability of interactive internet technologies such as e-mail, a discussion forum, or social networking services (e.g., Facebook or Twitter) on "government websites" (N = 40) in order to analyze the adoption or implementation of e-participation. These studies often use indices to measure the extent of e-participation features on a website without considering their actual use. Other studies took a closer look at specific e-participation tools. 42 studies analyzed specific social networking services and how they diffuse among government agencies and public administrations. Finally, articles focused specific "e-participation platforms" (N = 31). Only some exceptional articles took an in-depth look at other categories of e-participation tools like e-petitioning, social media monitoring tools or geographic information systems.

E-participation diffusion in and among public administrations is a relatively new topic, which explains why many articles have an analytical and descriptive focus (N = 48). Yet, we found that a similar number of articles (N = 54) develops causal explanations or combines causal explanations with testable predictions (hypotheses testing; N = 47). Finally, 17 articles conducted design and action research that analyzed ways how to design e-participation platforms. An analysis of the methodology showed that studies have adopted quantitative (N = 57), qualitative (N = 51), mixed methods approaches (N = 25), or developed conceptual accounts (N = 45).

Following this broad description of studies, Table 2 provides an overview of the findings of the review by presenting the categories that resulted from the inductive analysis of the main conceptual and empirical contributions of the articles. Our goal is to capture the depth of the field to provide an answer to our first research question (RQ1): *What are the main topics and areas of research about the e-participation diffusion process in public administrations?* To improve readability, we refer to exemplary articles in the text. Tables 3–5 provide a comprehensive overview of all studies in each area of research. In the following sections, we summarize these findings. We present the findings following the structure of the analytical framework: We separately discuss each stage of the diffusion process (adoption, implementation, and institutionalization). Within each of the stages, we differentiate the findings with regard to the level of analysis (macro, meso, and micro).

Table 2. Literature review overview.

	Adoption		Implementation		Institutionalization	
	Barriers and Facilitators	Strategies	Barriers and Facilitators	Strategies	Barriers and Facilitators	Strategies
Macro level (environment, external)	• Institutional context • External Stakeholders • Networks & learning		• Institutional context • External Stakeholders	• Institutional change strategies		• Institutional change strategies
Meso level (organization, organizational units)	• Institutional context • Organizational context • Resources	• Institutional change strategies	• Institutional context • Organizational context • Stakeholder relationship • Resources • Risks • Costs • E-participation design	• Institutional change strategies • Organizational integration • Relationship management • Evaluation • Design strategies		• Institutional change strategies • Organizational integration • Relationship management
Micro level (individual)	• Perceptions and attitudes		• Perceptions and attitudes	• Relationship management		

Table 3. Overview of adoption literature (see Appendix 2 for full references).

	Barriers and Facilitators	Strategies
Macro level (environment, external)	• Learning and Competition ○ Professional networks and awards (Yun and Opheim 2010; Royo, Yetano, and Acerete 2014) ○ Proximity (Ma 2013, Ma 2014; Lee, Chang, and Berry 2011; Sobaci and Eryigit 2015; Capineri, Calvino, and Romano 2015) ○ Time (Yun and Opheim 2010; Ma 2013; Norris and Reddick 2013; Capineri, Calvino, and Romano 2015) • Institutional context ○ Administrative culture (Rose 2005; Williams, Gulati, and Yates 2013; Katz and Halpern 2013; Choi 2014; Royo, Yetano, and Acerete 2014) ○ National culture (Zhao 2013) ○ Democratic development (Rose 2005; Åström et al. 2012; Jho and Song 2015; Zhu and Skoric 2014); • External stakeholders ○ Demand (van der Graft and Svensson 2006; Medaglia 2007; Yun and Opheim 2010, 2012; Åström et al. 2012; Katz and Halpern 2013; Mergel 2013; Norris and Reddick 2013; Williams, Gulati, and Yates 2013; Zhao 2013; Hofmann 2014; Schlaeger and Jiang 2014; Lev-On and Steinfeld 2015; Srivastava 2016) ○ Higher-tier influence (Aichholzer and Allhutter 2009; Panagiotopoulos, Moody, and Elliman 2012; Ma 2013; Royo, Yetano, and Acerete 2014; Mergel 2014) ○ Areas of application: Developing countries (Phillips and Kim 2012; Bailey and Ngwenyama 2011; Abdelsalam et al. 2013; Al Athmay 2013; Khan 2015); Crisis communication (Shen and Chu 2014); Urban planning (Conroy and Evans-Cowley 2006); Environmental protection (Royo, Yetano, and Acerete 2014)	
Meso level (organization or organizational units)	• Institutional context ○ Organizational culture (Royo, Yetano, and Acerete 2014; Zheng, Lauer Schachter, and Holzer 2014) ○ Regulations (Hofmann 2014) • Organizational context ○ Governmental design (Carrizales 2008a, 2008b; Norris and Reddick 2013; Zheng, Lauer Schachter, and Holzer 2014) ○ Policy making process (van Veenstra, Janssen, and Boon 2011) ○ Administrative system (Panopoulou, Tambouris, and Tarabanis 2008; Ma 2014; Srivastava 2016) • Resources ○ Size (Conroy and Evans-Cowley 2006; Medaglia 2007; Llorca, Fernandez-Duran, and de Souza Rech 2009; Höchtl, Parycek, and Sachs 2011; Lee, Chang, and Berry 2011; Williams, Gulati, and Yates 2013; Ma 2014; Kukovic 2015; Sobaci and Eryigit 2015; Srivastava 2016) ○ Lack of funding (Carrizales 2008a; Norris and Reddick 2013; Ganapati and Reddick 2014; Ma 2014; Sobaci and Eryigit 2015) ○ Capacities (van der Graft and Svensson 2006; Ma 2013; Zhao 2013)	• Institutional change strategies ○ Isomorphic strategies (Mergel 2013; Hofmann 2014) ○ Formal guidelines (Mergel 2013; Hofmann 2014) ○ Symbolic commitment (Royo, Yetano, and Acerete 2014)
Micro level (individual)	• Perceptions and Attitudes (Carrizales 2008a, 2008b; Aichholzer and Allhutter 2009; Aikins and Krane 2010; Baldwin, Gauld, and Goldfinch 2012; Feeney and Welch 2012; Norris and Reddick 2013; Ganapati and Reddick 2014; Hofmann 2014; Kukovic 2015)	

Table 4. Overview of implementation literature (see Appendix 2 for full references).

	Barriers and Facilitators	Strategies

Macro level (environment, external)	• Institutional context
	  ○ Administrative and national culture (Bryer 2011; Khan, Yoon, and Park 2014 ; Santaniello and Amoretti 2013)
	  ○ Political system (Åström et al. 2013; Santaniello and Amoretti 2013)
	  ○ Area of Application: Authoritarian regimes (Jiang and Xu 2009; Schlaeger and Jiang 2014; Zhu and Skoric 2014; L. Zheng 2013); Food and health agencies (Ferro et al. 2013; Panagiotopoulos, Barnett, and Brooks 2013; Shan et al. 2015); Crisis communication (Schellong 2008); Open Data Collaboration (Zuiderwijk and Janssen 2013; Alexopoulos et al. 2014); environmental governance (Schulz and Newig 2015); Youth participation (Scherer et al. 2009; Parycek et al. 2014); international organizations (Amoretti 2007)
	• External Stakeholders
	  ○ Influence of external actors on public administrations, e.g., in e-participation projects (Roeder et al. 2005; Karamagioli and Koulolias 2008; Kolsaker and Lee-Kelley 2009; Sæbø, Rose, and Nyvang 2009; Loukis et al. 2010; Chadwick 2011; Resca 2011; Sæbø, Flak, and Sein 2011; Ona 2013; Paganelli and Pecchi 2013; Zuiderwijk and Janssen 2013; Hepburn 2014; Hoff and Scheele 2014; Parycek et al. 2014; Díaz-Díaz and Daniel 2016)
	  ○ Political actors' influence (Scherer et al. 2009; Åström et al. 2013; Parycek et al. 2014; Sánchez-Nielsen et al. 2014)
	  ○ Citizens' demand (Åström et al. 2013; L. Zheng 2013; Lovari and Parisi 2015; Martín, De Rosario, and Caba Pérez 2015)
	  ○ New communities for co-production (Huber 2012; Linders 2012; Meijer, Grimmelikhuijsen, and Brandsma 2012)
		• Institutional change strategies (Collins and Butler 2002; Chadwick 2003; Zwass 2006; Amoretti 2007; Harrison et al. 2012; G. Lee and Kwak 2012; Linders 2012; Sandor 2012; Margetts and Dunleavy 2013; Clarke and Margetts 2014; Matei and Irimia 2014; Greve 2015)
		• National strategies (Geiselhart, Griffiths, and FitzGerald 2003; Aichholzer and Allhutter 2009; Khan, Yoon, and Park 2014; Joseph and Avdic 2016)

Meso level (organization or organizational units)	• Institutional context
	  ○ Administrative and organizational cultures (Kolsaker and Lee-Kelley 2009; Bryer 2011; Chadwick 2011; Criado and Rojas-Martín 2013; Oliveira and Welch 2013; Ganapati and Reddick 2014; Hepburn 2014; Schlaeger and Jiang 2014; Rose et al. 2015)
	  ○ Power structures (Chadwick 2011; Hepburn 2014)
	• Organizational context
	  ○ Organizational integration (Geiselhart, Griffiths, and FitzGerald 2003; Chadwick 2011; Bekkers, Edwards, and de Kool 2013; Mergel 2013; Oliveira and Welch 2013; Zavattaro 2013; L. Zheng 2013; K. McNutt 2014; Hofmann 2014)
		• Institutional change strategies
		  ○ Isomorphic strategies (Landsbergen 2011; Abdelsalam et al. 2013; Hofmann 2014; Royo and Yetano 2015)
		  ○ Social roles (Sæbø, Rose, and Nyvang 2009; Linders 2012; Zavattaro and Sementelli 2014)
		  ○ Experimentation (Geiselhart, Griffiths, and FitzGerald 2003; Jiang and Xu 2009; Mergel 2012; Landsbergen 2011; Mergel and Bretschneider 2013; Ganapati and Reddick 2014; Schlaeger and Jiang 2014; Zhu and Skoric 2014)
		  ○ Framing (Chadwick 2011; Chatfield and Brajawidagda 2013)

(*Continued*)

Table 4. (Continued).

Barriers and Facilitators	Strategies
○ Management (Geiselhart, Griffiths, and FitzGerald 2003; Panopoulou et al. 2011; Criado and Rojas-Martín 2013; Zuiderwijk and Janssen 2013; Khan, Yoon, and Park 2014) • Resources ○ Lack of capacities (Geiselhart, Griffiths, and FitzGerald 2003; Chadwick 2011; Landsbergen 2011; Panopoulou et al. 2011; van Veenstra, Janssen, and Boon 2011; Criado and Rojas-Martín 2013; Oliveira and Welch 2013; Vlad 2013; Ganapati and Reddick 2014; Hofmann 2014; Mearns, Richardson, and Robson 2015; Khan 2015; Shan et al. 2015) ○ Lack of funding (Chadwick 2011; Ganapati and Reddick 2014; Hofmann 2014; Mearns, Richardson, and Robson 2015) • Risks ○ Security and privacy (Landsbergen 2011; Panopoulou et al. 2011; Criado and Rojas-Martín 2013; Zavattaro 2013; Shan et al. 2015; Mearns, Richardson, and Robson 2015) ○ Digital divides and lacking inclusiveness (Spirakis, Spiraki, and Nikolopoulos 2010; Bertot, Jaeger, and Hansen 2012; Shan et al. 2015) ○ Legal insecurities (Chadwick 2011; Landsbergen 2011; K. McNutt 2014; Shan et al. 2015) ○ Provision of important public services (Linders 2012) ○ Complexity (G. Lee and Kwak 2012; Zuiderwijk and Janssen 2013) • Costs (Andersen et al. 2007; Bryer 2011; Wang and Bryer 2013) • Design ○ Project/Initiative (Roeder et al. 2005; Resca 2011; Sæbø, Flak, and Sein 2011; Scherer and Wimmer 2012; Paganelli and Pecchi 2013; Royo and Yetano 2015; Schulz and Newig 2015) ○ Communication (Parycek et al. 2014; Lev-On and Steinfeld 2015; Martín, De Rosario, and Caba Pérez 2015; Hao et al. 2016)	• Organizational integration ○ Organizational processes (van Veenstra, Janssen, and Boon 2011; Khan 2015) ○ Organizational structures (Bailey and Ngwenyama 2011; Mergel 2012; Mergel and Bretschneider 2013; Hofmann 2014) ○ Organizational policies (Klang and Nolin 2011; Chen et al. 2016; Meijer and Torenvlied 2016) ○ Adapting management practices (Sajjad et al. 2011; Reuver, Stein, and Hampe 2013; Janssen and Zuiderwijk 2014; Matei and Irimia 2014) ○ Professionalization (Hofmann 2014; Khan, Yoon, and Park 2014; Lev-On and Steinfeld 2014; Martín, De Rosario, and Caba Pérez 2015; Meijer and Torenvlied 2016) • Design approaches(Tonn 2004; Chun and Cho 2012; Karkin and Çalhan 2012; Charalabidis et al. 2014; Scherer and Wimmer 2014) ○ Stakeholder- and organization-aware processes and platforms (Karamagioli and Koulolias 2008, 446; Scherer et al. 2009; Loukis et al. 2010; Ona 2013; Paganelli and Pecchi 2013; Reuver, Stein, and Hampe 2013; Alexopoulos et al. 2014; Parycek et al. 2014; Royo and Yetano 2015; Díaz-Díaz and Daniel 2016) ○ Open source approach (Miori and Russo 2009; Paganelli and Pecchi 2013) ○ E-cognocracy (Moreno-Jiménez, Pérez-Espés, and Wimmer 2013; Moreno-Jimenéz, Pérez-Espés, and Velazquéz 2014) ○ One-stop-shops (Collins and Butler 2002; Al Athmay 2013) ○ Combined Open Data and Participation platforms (Huber 2012; Alexopoulos et al. 2014; Janssen and Zuiderwijk 2014; Sivarajah et al. 2016; You et al. 2016) ○ Technological solutions, e.g., language processing (Ona 2013) or visualization (D. Lee et al. 2010)

(*Continued*)

Table 4. (Continued).

	Barriers and Facilitators	Strategies

	• Stakeholder relationship
	  ○ Social capital (K. McNutt 2014)
	  ○ Trust (Loukis et al. 2010; Scherer et al. 2009; Scherer and Wimmer 2014)
	  ○ Interaction management (Panopoulou et al. 2011; Ona 2013; Parycek et al. 2014; Lovari and Parisi 2015; Schulz and Newig 2015; Meijer and Torenvlied 2016)
	• Collections of factors (D. Lee et al. 2010; Panopoulou et al. 2011; Chun and Cho 2012; Picazo-Vela, Gutiérrez-Martínez, and Luna-Reyes 2012; Ferro et al. 2013; Harris and Winter 2013; Ona 2013; L. Zheng 2013; Panopoulou, Tambouris, and Tarabanis 2014; Parycek et al. 2014; Sánchez-Nielsen et al. 2014; Díaz-Díaz and Daniel 2016)
		• Evaluation (see also Karamagioli and Koulolias 2008; Scherer et al. 2009; Moreno-Jiménez, Pérez-Espés, and Wimmer 2013; Ferro et al. 2013; Parycek et al. 2014; Sánchez-Nielsen et al. 2014)
		  ○ Normative orientation (Harrison et al. 2012; Lidén 2012; Moreno-Jiménez, Pérez-Espés, and Wimmer 2013)
		• Relationship management
		  ○ Communication (Brainard and McNutt 2010; Magnusson, Bellström, and Thoren 2013; Mergel 2013; Mossberger, Wu, and Crawford 2013; Snead 2013; Sobaci and Karkin 2013; Hofmann 2014; Khan, Yoon, and Park 2014; Zheng and Zheng 2014; Alasem 2015; Capineri, Calvino, and Romano 2015; Martín, De Rosario, and Caba Pérez 2015)
		  ○ Social media monitoring (Kavanaugh et al. 2012; Bekkers, Edwards, and de Kool 2013; Panagiotopoulos, Barnett, and Brooks 2013; Zavattaro and Sementelli 2014; Meijer and Torenvlied 2016)
		  ○ Promotion (Snead 2013; Sánchez-Nielsen et al. 2014)
		  ○ Partnerships (Linders 2012; Meijer, Grimmelikhuijsen, and Brandsma 2012; Lampe et al. 2014; Sánchez-Nielsen et al. 2014)

Micro level (individual)	• Perceptions and attitudes (Chadwick 2011; Feeney and Welch 2012; Picazo-Vela, Gutiérrez-Martínez, and Luna-Reyes 2012; Criado and Rojas-Martín 2013; Harris and Winter 2013; Ganapati and Reddick 2014; Hofmann 2014; Mearns, Richardson, and Robson 2015; Royo and Yetano 2015)
	  ○ Complex value systems (Resca 2011; Rose et al. 2015)
	  ○ Individual characteristics of administrators (Feeney and Welch 2012; Sobaci and Karkin 2013; Vlad 2013; Mearns, Richardson, and Robson 2015)
	  ○ Administrators' roles (Bailey and Ngwenyama 2011; Resca 2011; Chatfield and Brajawidagda 2013; Zavattaro and Sementelli 2014; Mearns, Richardson, and Robson 2015)
		• Relationship management (Chatfield and Brajawidagda 2013; Sobaci and Karkin 2013; Zavattaro and Sementelli 2014; Mearns, Richardson, and Robson 2015)

Table 5. Overview of institutionalization literature (see Appendix 2 for full references).

	Barriers and Facilitators	Strategies
Macro level (environment, external)		• Institutional change strategies (Bertot, Jaeger, and Hansen 2012; Panagiotopoulos, Moody, and Elliman 2012; Oliveira and Welch 2013; Mergel 2016)
Meso level (organization or organizational units)		• Institutional change strategies ○ Changing organizational norms and rules (Mergel 2012; Mergel and Bretschneider 2013; Mergel 2014) • Organizational integration (Schlaeger and Jiang 2014; Mergel 2016) • Relationship management (Zavattaro and Sementelli 2014)
Micro level (individual)		

Adoption

The macro level

A major focus of macro level research on the adoption of e-participation practices lies in examining barriers and facilitators that explain variance in public administrations' (usually infrequent) adoption of e-participation.

A first set of factors refers to learning and competition between administrative units. For instance, studies analyzed how participation in *professional networks and awards* (e.g., Royo, Yetano, and Acerete 2014) or geographic *proximity* (e.g., Lee, Chang, and Berry 2011; Sobaci and Eryigit 2015), which support inter-organizational learning and competition, are related to the adoption of e-participation among public administrations. Other studies indicate that the diffusion of e-participation is a cumulative learning process of administrative units over *time* (e.g., Ma 2013).

Cross-country studies show that the institutional context, e.g., *national and administrative cultures* (Royo, Yetano, and Acerete 2014; Zhao 2013), is related to the uptake of e-participation by public administrations at the local and the national level. However, research has not provided clear evidence regarding the influence of a country's *democratic development* on e-participation adoption at the national level (e.g., Lee, Chang, and Berry 2011; Rose 2005).

Another set of factors refers to the influence of external stakeholders, particularly *demands* from citizens and elected politicians. For instance, studies show that demands associated with the number of internet users (e.g., Åström et al. 2012; Lee, Chang, and Berry 2011), or the socio-economic status of the population (Medaglia 2007; Williams, Gulati, and Yates 2013) is related to e-participation adoption. Citizens are the main target group of e-participation processes and need to be considered in the innovation process. Additionally, studies analyzed how decisions and policies of higher-tier, national agencies influence the adoption of e-participation practices at lower administrative levels (*higher-tier pressure*; e.g., Ma 2013; Mergel 2014).

The meso level

E-participation adoption research analyzes public administrations' decisions whether to adopt participatory technologies or not. Most studies in this review indicate that the adoption of e-participation practices and technologies among public organizations is still low on all administrative levels except for some social networking services that reach adoption rates of up to 90 percent (Criado and Rojas-Martín 2013; Snead 2013; Mossberger, Wu, and Crawford 2013; Ganapati and Reddick 2014; Khan 2015; Leone, Paoli, and Senatore 2015).

With regard to the organizational meso level barriers and facilitators that can explain low adoption rates, research showed that the institutional context of public administrations is a relevant factor. Research studied how *organizational culture* in terms of, for example, the commitment to values and norms like environmental goals or transparency, is related to the adoption of

e-participation (Royo, Yetano, and Acerete 2014). The formal organizational context of public administrations, such as *governmental design*, such as council-manager vs. mayor-council forms of local government in the U.S. (e.g., Carrizales 2008) and the position in the *administrative system* (e.g., central/decentral; Ma 2014), have been shown to further affect the adoption.

Furthermore, studies scrutinize how the availability of organizational resource influences adoption decisions. Many studies use *size* as a proxy for slack resources (population size e.g., Conroy and Evans-Cowley 2006; Höchtl, Parycek, and Sachs 2011; Lev-On and Steinfeld 2015, or the size of the geographic area e.g., Sobaci and Eryigit 2015) and analyze how resource slack affects the adoption of e-participation. Furthermore, *capacities* like technology skills in the organization (e.g., the presence of the telecommunications infrastructure or sophistication of other e-government services) can be relevant resources that positively influence e-participation adoption (e.g., van der Graft and Svensson 2006; Zhao 2013).

Only two studies, which focus on social media managers, analyze meso level adoption strategies (Hofmann 2014; Mergel 2013). They identify passive (e.g., observation of best practices) and active (informal knowledge-sharing among managers) institutional change strategies related to adoption decisions. Such *isomorphic strategies* (cf. DiMaggio and Powell 1983) based on imitation can take extreme forms when public administrations only show *symbolic* commitment and do not really adopt new ICTs for e-participation (Royo, Yetano, and Acerete 2014).

The micro level

Few studies analyze the adoption of e-participation on the individual level, but those that do, focus on the micro level barriers of adoption (e.g., skepticism concerning e-participation). However, having skills and experiences in the use of technology and interaction with the public can aid the public officials' belief that ICT can facilitate public input (e.g., Baldwin, Gauld, and Goldfinch 2012). How administrators at the local level perceive leadership support (organizational context), citizens' demand (external stakeholders) and normative pressures (institutional context) also influence e-participation adoption (Ganapati and Reddick 2014; Norris and Reddick 2013), indicating close interactions between the micro and the meso level.

Implementation

The macro level

Research on the implementation of e-participation by public administrations has scrutinized factors and strategies at the macro level. Some studies describe barriers and facilitators for e-participation implementation in public administrations that result from its embeddedness in broader institutional contexts – that is for example an *administrative or national culture* (e.g., Bryer 2011; Khan, Yoon, and Park 2014) or *the political system* (e.g., the democratic tradition and political climate; Åström et al. 2013). Furthermore, studies about external stakeholders show that *political actors* and *citizens* influence whether and how public administrations implement and use e-participation technologies and projects. For example, public administrations depend on political actors to be committed to newly implemented e-participation processes because they need to adapt their own decision-making practices (e.g., Karamagioli and Koulolias 2008). Citizens' decreasing trust in governmental actors can positively influence e-participation implementation in public administrations (e.g., Åström et al. 2013) but can be a barrier as well, when citizens do not trust administrative online-sources and thus do not use them (Zheng 2013). Other authors focus on new digital *communities for co-production* in which citizens take over administrative tasks and services. This new form of participation influences how governments provide services, information, and make decisions (Linders 2012; Meijer, Grimmelikhuijsen, and Brandsma 2012).

Regarding strategies, research analyzes reform ideals as important carriers of institutional change. Several authors develop new accounts of ICT-based reforms in public administrations that focus on institutional change processes and their consequences concerning participation and collaboration (e.g., "Open Government" (Harrison et al. 2012), "We-Government" (Linders 2012), or "Digital Era Governance" (Margetts and Dunleavy 2013)). They analyze and describe how ICT related developments can fit into current ideals of organizing in the public sector. Others address the diversity of reform movements and point out that other important streams in public management research (e.g., new public management/governance reforms) should not be neglected. Democratization is only one of many goals of public administrations that implement ICTs (Greve 2015; Norris 2003).

The meso level

Meso level studies focusing on the organizational implementation represent the largest share of research in this review. However, the multiplicity of approaches again highlights the fragmented status of the field. First, meso level barriers and facilitators of e-participation highlight that technology impacts society, organizations, and politics but is also embedded in these structures. Democracies are constantly under construction, and ICTs are not necessarily transformative and follow ideal administrative reforms but develop incrementally inside administrative contexts (e.g., Abdelsalam et al. 2013; Ganapati and Reddick 2014; Kraemer and King 2006; McNutt 2014).

Again, researchers have paid considerable attention to the institutional context. Case studies analyze how institutionalized *power structures* or *administrative and organizational cultures* (i.e., shared meaning systems) affect e-participation implementation and can explain resistance and project failure (e.g., Chadwick 2011; Hepburn 2014; Kolsaker and Lee-Kelley 2009; Rose et al. 2015; Zheng 2013). For example, the bureaucratic "'silo' mentality" (Hepburn 2014, 97) and "[d]epartmental rivalry" (Chadwick 2011) can inhibit e-participation implementation, information sharing, and fast reactions to online-communication, which can negatively affect citizens' trust in e-participation projects. Additionally, research indicates that the organizational context influences the implementation of e-participation. Whether and how social media is used for participation and interaction varies between administrative tasks, departments (Bekkers, Edwards, and de Kool 2013; Hofmann 2014; Mergel 2013; Oliveira and Welch 2013) or the phases of policy-making (e.g., agenda setting or implementation; van Veenstra, Janssen, and Boon 2011). In addition, a lack of *management* mechanisms or positions (e.g., a social media manager) for coordinating or promoting e-participation (e.g., Criado and Rojas-Martín 2013; Panopoulou et al. 2011) and a lack of resources and skills needed for e-participation's internal process management (Scherer and Wimmer 2012; van Veenstra, Janssen, and Boon 2011) can hinder the successful implementation of e-participation. Thus, studies analyzed how a *lack of funding* and *a lack of capacities* (e.g., training, skills, IT capacities, human resources, experience and time) affect the interaction with large groups of participants and the appropriate evaluation and integration of these discourses into the decision-making process (e.g., Ganapati and Reddick 2014; Mearns, Richardson, and Robson 2015; Panopoulou et al. 2011).

Some studies focus on the risks associated with e-participation (e.g., from *security and privacy* issues, *digital divides*, or how to secure the *provision of important public services* in situations of crowd- or outsourcing). For example, digital divides challenge public administrations main task of neutral and equal treatment of all citizens. Additionally, the *costs* for technology, participation (mobilization of participants), and democratization (quality of the participation process) have been analyzed as a central management challenge. Other studies focus on the design of e-participation *tools, projects, and initiatives* as an important factor for the implementation of e-participation. For instance, project designs should be in line with the internal (e-participation process planning, moderation, or software) and external (political-administrative policy making) contexts to facilitate the implementation of e-participation (e.g., Paganelli and Pecchi 2013; Sæbø, Flak, and Sein 2011; Scherer and Wimmer 2012). Furthermore, the *communication design*, such as the content and format

of posts, the design of online discussions or the activity of a social media account, is also an important factor for the successful implementation of e-participation regarding the aim to actually motivate citizens to use these new formats.

Similarly, few studies actually analyze whether e-participation implementation contributes to building high-quality relationships with citizens and other stakeholder groups. Those that exist show that resources for *interaction management* that facilitate online participation (e.g., promote interaction) and *trust* (Scherer and Wimmer 2014) between stakeholder groups are an important facilitator of participation and dialogue.

Many studies indicate that public administrations should develop strategies that take those complex barriers and facilitators into account to minimize the risk of failure and provide best practices for tackling challenges (e.g., Mergel 2012). Most meso-level institutional change strategies seek alterations in the cultural, normative, and regulatory context of public administrations. For example, a willingness to let citizens participate should be developed in the organization because otherwise the implementation of e-participation risks to be only symbolic (Landsbergen 2011; Royo and Yetano 2015). Yet, research again indicates that public administrations react to normative pressures (e.g., citizen demand) for e-participation by applying *isomorphic strategies* that include the superficial implementation of e-participation that lead to few changes in the internal setting of public administrations (Hofmann 2014). So how the *social roles* and tasks of public administrations and other actors can be changed or preserved in an increasingly interactive environment remains unclear (e.g., Linders 2012; Zavattaro and Sementelli 2014). Other studies explore how *experimentation* with and *framing* of e-participation can lead to actual spaces for citizen participation or to a strategic administrative use of these portals. For example, governments can adopt or develop subtle forms of control, such as spreading propaganda (e-information) or influencing the topics that can be discussed. Such tactics undermine the goals and values of participatory action (e.g., Jiang and Xu 2009; Schlaeger and Jiang 2014).

Concerning organizational integration, there are different degrees to which public administrations can implement social media in existing *organizational processes* (e.g., from full integration to standalone processes; Khan 2015). For instance, testing new or adapting existing *organizational structures* such as new departments or positions is one way of implementing e-participation into organizational process. Other studies suggest *adapting management practices* like workflow management or business-model approaches (e.g., Sajjad et al. 2011) or organizational social media *policies* (e.g., Chen et al. 2016) can help to efficiently implement interactive digital participation in the organization. Thus, framing and embedding e-participation technologies and practices in the institutional and organizational context is important, but both have not been researched in depth.

Other researchers use design approaches to help organizations build and implement ICT tools that address certain problems (e.g., Alexopoulos et al. 2014). They focus on the development of process and reference models that describe how e-participation tools (technology) and decision-making processes can be designed to fit organizational, institutional or policy contexts so that successful e-participation projects can be planned. Designing *stakeholder- and organization-aware processes and platforms* (e.g., developing e-participation designs that motivate citizens and give incentives to participate through, for example, competitions; Díaz-Díaz and Daniel 2016) or *combining* innovative administrative approaches like *open data and e-participation* (e.g., Sivarajah et al. 2016) are prominent strategic directions.

Furthermore, studies scrutinized evaluation of e-participation projects and their consequences as an important strategic task (e.g., Karamagioli and Koulolias 2008). Evaluations showed that public administrations can learn a lot from evaluating aspects of their e-participation practices including their technological feasibility, the political advantages, and their impact in the specific organizational context. But how public administrations implement evaluation mechanisms themselves has not been researched so far.

Most of the previous strategies address the internal processes of public administrations, but a main purpose of e-participation is to open the political-administrative system for public

engagement. That citizens (or another target group) use e-participation opportunities is a necessary precondition for e-participation success. Thus, relationship management strategies have become another important part of research. Social media *communication* between public administrations and citizens can help to connect with citizens (Shan et al. 2015), but many studies report that strategies remain based on sending information and self-promotion and hardly support interactive networking and political participation (e.g., Alasem 2015; Brainard and McNutt 2010; Zheng and Zheng 2014). Thus, government responsiveness and interactivity are important to reach the democratic goals associated with e-participation practices, for instance through *social media monitoring*, that enables public administrations to identify and react to relevant online-communication (Bekkers, Edwards, and de Kool 2013; Panagiotopoulos, Barnett, and Brooks 2013).

The micro level

Most research on barriers and facilitators of implementation at the micro level is related to public managers' perceptions and attitudes towards e-participation. For instance, public managers' perceptions of e-participation are embedded in the *complex value systems* in the public sector. These values frame decisions regarding the implementation of IT in public administrations and can be conflicting (e.g., values of high-quality engagement versus efficient, cost saving processes Rose et al. 2015). Also, perceived risks or benefits can be conflicting among administrative and political decision-makers (Kolsaker and Lee-Kelley 2009) or digital communication that is not restricted to office hours might lead to work-life-conflicts (Mearns, Richardson, and Robson 2015). Such perceptions can also depend on *individual characteristics* (e.g., type of department, tenure; e.g., Feeney and Welch 2012), or administrators' roles in e-participation processes (social brokers, facilitators, or coordinators; e.g., Resca 2011).

How individual administrators' strategies for implementing tools for managing relationships with citizens has attracted much less attention (Sobaci and Karkin 2013; Zavattaro and Sementelli 2014). Overall, research about individual differences and strategies of members of public administrations is limited compared to macro and meso level implementation research.

Institutionalization

The macro level

The phase of institutionalization has received the least attention by researchers. Regarding macro level strategies, some studies propose that institutionalization of e-participation in the external *institutional context* (e.g., in national regulations and laws) might increase the adoption and implementation of dialogic e-participation practices in public administrations (Bertot, Jaeger, and Hansen 2012; Mergel 2016). However, studies showed that higher-tier regulations are seldom fully institutionalized by local public administrations (see 'isomorphic implementation strategies') and might even reduce their willingness to take the risks inherent in open government strategies when they cannot be adapted to local circumstances (Oliveira and Welch 2013; Panagiotopoulos, Moody, and Elliman 2012).

The meso level

Concerning meso level strategies, few studies conceptualized institutionalization as the last phase of intra-organizational diffusion of social media that can facilitate participation. They indicate that implementation processes, through *institutional change strategies*, can lead to a status of e-participation related norms, regulations, and organizational structures (e.g., social media departments, guidelines, or participatory practices) as a normal part of the organization ("Institutionalization") (Mergel and Bretschneider 2013). Supplemental research analyzed how formal institutionalization as a process of *organizational integration* of social media practices in bureaucratic agencies can have positive (allocation of additional

resources to these practices) but also negative outcomes (e.g., social media guidelines can lead to formalized procedures limiting administrators' creative leeway; Mergel 2014). Accordingly, institutionalization strategies can be analyzed on a continuum between convergence towards "old bureaucratic practices" and the complete integration of "new" opportunities of ICTs for participation into structures and routines (Mergel 2016; also see Schlaeger and Jiang 2014). Additionally, conceptual studies highlight that *relationship management and communication strategies* that regard the characteristics and limitations of technology as well as the capacities of citizens and administrators are necessary to unlock the mere potential for interaction and collaboration that social media offer and actually institutionalize opportunities for political participation (Zavattaro and Sementelli 2014). Yet, overall detailed empirical knowledge about institutionalization at the meso level is limited.

The micro level

We could not identify a study that analyzes the institutionalization of e-participation in public administrations at the micro level.

Multi-level and multi-phases research

Several of the factors and strategies identified above have been analyzed in various studies, levels and phases of our analytical framework. Especially those factors and strategies that build pairs on the macro and meso levels (e.g., institutional context and strategies) are of special interest, because they indicate connections between levels and phases (see Table 2). However, although those recurring factors and strategies highlight the importance of integrated research, we identified few studies that combine different levels (multi-level focus) and phases (process focus).

The first stream integrates multiple levels (i.e., *multi-level focus*). Theory-driven multi-level approaches to e-participation proposed that institutional context, e-democracy practices, and human agency are interrelated and have to be analyzed in combination (Parvez and Ahmed 2006) or showed how e-participation influences trust in public administrations and administrators (Scherer and Wimmer 2014). Several studies develop and combine theories that help to understand and analyze the interdependence of technologies, structures (e.g., institutional or organizational), and individual actors. For example, one study develops a model with which administrative and political e-participation practices can be analyzed based on several theories and models that address different analytical levels (e.g., Leavitt's diamond, structuration, and practice theory; Hoff and Scheele 2014). Others analyze this interplay and resulting conflicts through concepts like affordances (Stamati, Papadopoulos, and Anagnostopoulos 2015), phenomenology (Resca 2011), public values (Rose et al. 2015), or dilemmas (Knox 2016; Mergel 2012). Further empirical applications of multi-level concepts remain scarce. Some investigate how external regulations (e.g., laws) influence the organizational use (e.g., Garcia-Sanchez, Rodriguez-Dominguez, and Frias-Aceituno 2013; Panagiotopoulos, Moody, and Elliman 2012) and adoption of e-participation (see the section on macro level adoption research). Furthermore, case studies provide insights about the complex interplay of specific barriers, facilitators, and strategies during e-participation implementation. Such insider methods, although seldom applied, can help to analyze "attitudes, shared meanings, resources and interactions" (Chadwick 2011, 23) and to evaluate outcomes of e-participation, such as project success and failure at multiple levels (see also Hepburn 2014; Mearns, Richardson, and Robson 2015).

The second stream integrates multiple phases in the diffusion process (*process focus*). Some studies develop theoretical accounts of the diffusion process from early experimentation until institutionalization (Mergel 2012; Mergel and Bretschneider 2013) or investigate costs and barriers in different phases (Bryer 2011; Zavattaro and Sementelli 2014; Zuiderwijk and Janssen 2013). Few authors exploratively analyzed this process through detailed country reports (e.g., Höchtl, Parycek, and Sachs 2011), case studies in municipalities (Schlaeger and Jiang 2014; van Veenstra, Janssen, and Boon 2011), or analyses of strategy documents (e.g., Joseph and Avdic 2016) and organizational

diffusion processes (Mergel 2013, 2014). Nevertheless, most studies that combined measures and analyses of the adoption and use phase often did not focus on the procedural dimension of e-participation diffusion.

Summary

The analysis of existing research about the diffusion of e-participation in public administrations allows us to draw a more detailed picture of the current status of the field. Especially, overview Table 2 and the more detailed Table 3–5 about each phase of the diffusion process provide a comprehensive overview of the areas and topics of research (RQ1). On this basis research in and across phases can be summarized:

Adoption of e-participation still is an ongoing process. Research on all levels – micro, meso, and macro – indicates that the adoption of e-participation is influenced by many factors (see Table 2) and that it develops slowly and incrementally. Regarding the multiplicity of barriers and facilitators being analyzed in the field, Norris and Reddick (2013) underlined that the status of e-participation adoption research is rather confusing because the interplay of factors is hardly understood. Additionally, research about the process and strategies leading to the adoption of e-participation is hardly existent with only few exemptions. Thus, it is still not entirely clear when, how, and why public administrations decide to adopt e-participation practices.

The main focus of implementation research currently lies on the meso level. Although implementation is the phase of e-participation diffusion with most articles associated to it (121), detailed research about barriers and facilitators and especially strategies regarding the organizational and institutional change process (democratic innovations) associated with e-participation implementation has only started to emerge. This can be underlined by the fact that implementation research is largely based on explorative descriptive, explaining, and design approaches (84%). Additionally, implementation research is relatively fragmented because many studies analyze a narrow section or single barriers, facilitators and strategies of the e-participation diffusion process. Implementation is an ongoing learning process for public administrations (e.g., Harris and Winter 2013, 8) and research indicates that e-participation implementation is open to interpretation. It can lead towards real opportunities for participation and collaboration, but often transformational effects associated with e-participation diffusion are limited when e-participation tools or social media are implemented in the institutionalized bureaucratic structures of public administrations (e.g., Meijer and Torenvlied 2016; Mergel 2012; Schulz and Newig 2015).

Such institutional (especially normative and cultural) aspects of making e-participation a taken-for-granted task of public administrations, i.e. institutionalization, have received the least attention in publications about the diffusion of e-participation in public administrations. This relates to the discourse about the compatibility of bureaucratic public administrations and tasks of democratic participation and deliberation (e.g., Tholen 2015). Furthermore, except for some studies analyzing the formal institutionalization of e-participation regulations, most work has been conceptual. Hence, knowledge is scarce about how and in which situations the institutionalization of e-participation in the complex organizational and institutional fabric of public administrations is possible and legitimate.

First results from multi-level and multi-phases studies highlight that organizational challenges and strategies in the process of e-participation diffusion cannot be addressed from a single perspective. The overview of the findings in Table 2 indicates that several sets of factors and strategies are relevant across most of the fields of the analytical framework (e.g., organizational context/organizational integration, institutional context/institutional change strategies, design/design strategies, external stakeholders and stakeholder relationships/relationship management). However, research that systematically analyzes these categories across levels and phases of the e-participation diffusion process is hardly existent.

Discussion and implications: towards a research agenda

Our literature review provides a comprehensive summary of research on the diffusion of e-participation in public administrations. Yet, the review also reveals five areas that have received little attention, although they are important to better understand the diffusion of e-participation in public administrations and to develop a more coherent understanding of e-participation diffusion processes. In this section, we focus on these under-investigated areas and propose avenues for future research to answer our second research question (RQ2): What aspects of the diffusion of e-participation in public administrations should future research focus on?

(1) *The institutionalization gap*: The first gap is the neglect of the last phase in the diffusion of e-participation in public administrations: The institutionalization of e-participation. Institutionalization is important, because if e-participation has become institutionalized within public administrations, it has become a common and even expected part of the organization that is constantly reproduced by its members (Zucker 1977). What gets institutionalized, how, and with which consequences, thus, is an important question. We have two main recommendations for future research: First, we recommend research that explores the meso-level process of institutionalization. Particularly, researchers may focus on contestations surrounding the institutionalization of e-participation (Schneiberg and Soule 2005). For instance, (how) do organizations (e.g., political parties) or social movements (e.g., groups of citizens) contest the institutionalization of e-participation and how do public administrations react to these struggles? Do members of public administrations also contest the institutionalization of e-participation? Answering these questions might help better understanding the complexities involved in the process of institutionalization. Second, we recommend research on the process of institutionalization at the micro level. As research on the institutionalization of management ideas or open government practices has shown, organizational actors (e.g., managers or employees) translate the ideas to adapt them to the context of the organization (Kornberger et al. 2017; Reay et al. 2013). Values and norms that are incorporated in the concept of e-participation may be in conflict with the bureaucratic logic of public administrations (Kornberger et al. 2017; Meyer and Hammerschmid 2006). To reduce the conflict – and to increase the acceptance of e-participation among members of public administrations – it is important that either the public administration changes its culture and incorporates values and norms related to e-participation or that organizational members translate e-participation's values and norms to fit them to the bureaucratic logic. Whether and how such a translation occurs within public administrations are thus important questions to better understand the institutionalization of e-participation. Also, research may explore micro-level mechanisms that are involved in the process of institutionalization. For instance, research has shown that two micro-level mechanisms explain institutional change over time (Haack and Sieweke 2017; Tilcsik 2010): First, the members of the organization may change their attitudes towards e-participation. That is, the longer members deal with e-participation, the more positive their attitude towards e-participation, which contributes to the institutionalization of e-participation in public administrations. Second, institutional change can be the result of a process of replacement. That is, older employees, who may have more negative attitudes towards e-participation, are gradually replaced with younger employees with more positive attitudes. Thus, generational changes in public administrations may also contribute to the institutionalization of e-participation. Analyzing these micro-level mechanisms can help better understanding why e-participation institutionalized in some public administration but not in others.

(2) *The micro-level gap*: Our literature review has shown that research on all three phases of the diffusion process has rather neglected the micro level. This neglect impairs our understanding about the diffusion of e-participation because decisions about whether e-participation is adopted

and how it will be implemented, used, or resisted are often made by managers and employees (Damanpour and Schneider 2006; Wirtz et al. 2016). Therefore, we recommend future research that focuses on micro-level actors and processes. This recommendation is in line with recent developments towards microfoundations of the diffusion of ideas in management research (Chandler and Hwang 2015). We recommend two avenues for future research: First, researchers should analyze micro-level processes that are involved in the diffusion of e-participation in public administrations. The first crucial step is the decision whether to adopt e-participation practices. At this point, it is important to gain a better understanding how managers within public administrations make the decision and which factors influence their decision. For instance, is the main motivation of the managers to increase organizational legitimacy or do they expect an increase in organizational performance (Kennedy and Fiss 2009)? And how do they align their goals with those of political decision-makers (Kolsaker and Lee-Kelley 2009)? The second step is the implementation process of e-participation. For instance, researchers may focus on how managers implement e-participation in public administration and how employees react to the implementation. Finally, research should focus on the institutionalization of e-participation. How does e-participation attain the status of an institutionalized practice within public administrations (see research avenue 1)? Also, researchers may explore the unintended consequences of the implementation and institutionalization of e-participation in public administrations. For instance, how does it affect the job satisfaction and job performance of employees (Venkatesh, Bala, and Sambamurthy 2016) and which individual factors (e.g., public service motivation, organizational tenure) moderate employees' reaction? Answering these questions will help to gain insights into processes at the micro level and how they affect the diffusion of e-participation in public administrations.

(3) *The process gap*: The third gap refers to the lack of studies that simultaneously focus on two or more phases of the diffusion process. This research is important because we expect interdependences between the phases, so that analyzing the phases in isolation may provide an incomplete picture. For instance, researchers may explore how the motivation for the adoption of e-participation (phase 1) affects its implementation (phase 2) and institutionalization (phase 3) in public administrations (see, e.g., Collings and Dick 2011). Possible research questions are whether the resistance towards e-participation is greater if the main motivation for its adoption is to gain legitimacy versus improving organizational performance or whether the implementation and institutionalization are hindered (fostered) if the adoption decision resulted from a top-down (bottom-up) process. For example, scholars showed that ICTs get evaluated against the backdrop of multiple public values (means-end relations; e.g., J. Rose et al. 2015) and resulting costs (Bryer 2011). This interplay and process of negotiating public values and existing routines at different stages of the diffusion process could be detailed in future studies through looking at path-dependencies (e.g., Strambach and Halkier 2013). Similarly, researchers can conduct process-related longitudinal (case) studies. For instance, longitudinal studies have provided important insights into how and why users resist the implementation of new ICTs, how individual-level behaviors and organizational-level features affect each other over time, and to what extent individual-level resistance behaviors differ in early versus late stages of the implementation process (Lapointe and Rivard 2005). Such a longitudinal case study within a public administration can provide further insights into the implementation and institutionalization of e-participation.

(4) *The multi-level gap*: The fourth gap is the lack of multi-level studies, i.e., studies that connect different levels of analysis. Multi-level research has received attention in fields such as public management, and information systems research. It assumes the existence of (1) top-down contextual effects, i.e., phenomena at higher levels affect phenomena at lower levels (e.g., organizational climate influences individual behavior); and (2) bottom-up emergence, i.e., interactions among entities at lower levels yield phenomena at higher levels (e.g., organizational climate

emerges over time as a result of interactions of individuals) (Kozlowski et al. 2013). We argue that a multi-level research agenda may provide new insights into the diffusion of e-participation in public administrations. We suggest two lines of research: First, research may focus on top-down contextual effects. For instance, we recommend research that builds on existing studies (see chapter 4.2.1; research about the macro level of adoption) and analyzes the effect of the institutional context (e.g., laws and regulations, culture, political system) on the initial decision of public administrations to adopt and implement different e-participation practices. Also, research on innovation and ICT implementation suggests that taking into account contextual effects, such as the climate for innovation or leader support, may help to better understand employee reaction to e-participation practices (Binci 2011; Misuraca and Viscusi 2015). Second, research may focus on bottom-up emergence. For instance, scholars may analyze how a climate for e-participation emerges, which roles stakeholders (e.g., social movements) play in this process, and how this climate may affect the decision to adopt and use e-participation (Sæbø, Flak, and Sein 2011). Furthermore, researchers might investigate how employees develop a shared understanding about e-participation and how this emerging climate affects the implementation and institutionalization of e-participation in the public administration. Answering these questions might contribute to our knowledge about the diffusion of e-participation in public administrations.

(5) *The strategy gap*: Fifth, our review shows that knowledge of strategic actions directed at e-participation diffusion in public administrations is limited. There is hardly a discourse that deals with the question concerning the strategic individual and/or collective agency directed at the diffusion of e-participation in public administrations. Much more research is needed that opens the organizational and institutional "black box" (Chadwick 2011, 24) to clarify how public administrations can actually overcome barriers, build a facilitating environment and implement e-participation successfully (Meijer 2015). This offers opportunities for further research regarding strategies at the meso level (e.g., department or organization) and the micro level. On the one hand, research in public sector contexts highlighted that individual actors (e.g., public managers) may face institutional complexity due to conflicting expectations and values from a growing number of administrative paradigms and need to develop individual strategies to cope with this situation (sensemaking) and pursue personal goals in reform and innovation processes (Cloutier et al. 2016). Utilizing such a perspective offers valuable insights regarding individual efforts of administrative actors towards the organizational structures, relations, operational integration, and meaning given to the innovation when e-participation gets adopted and implemented and how this can lead to its institutionalization. Doing so would facilitate critical reflections on ongoing diffusion processes and provide insights into best and worst practices of e-participation diffusion. On the other hand, public organizations or sub-units might develop different strategic approaches towards e-participation through adopting and implementing certain organizational structures to support the involvement of citizens via ICTs or specific e-participation formats. Thus, an intensified analysis of organizational strategic orientations and their fit with certain local contexts could enhance the understanding of e-participation diffusion.

Conclusion

E-participation practices are increasingly adopted by governments around the world and increase citizens' involvement in and the transparency of governmental decisions. Public administrations play a key role in this development, because often they are responsible for organizing and managing e-participation processes. Public administrations often struggle with the provision of e-participation opportunities. Thus, researchers from various disciplines (e.g., public administration, information systems, organization studies) have analyzed the diffusion of e-participation within public administrations to identify barriers and facilitators as well as strategies. Against this background, the aim of this study was to provide a systematic, cross-disciplinary literature review of research on the diffusion of e-participation in public administrations. Particularly, we focus on two research

questions: (1) What are the main topics and areas of research about the e-participation diffusion process in public administrations? (2) What aspects of the diffusion of e-participation in public administrations should future research focus on? We developed an analytical framework that distinguishes three stages of the diffusion process (adoption, implementation, and institutionalization) and three levels of analysis (macro, meso, and micro) to integrate research from various disciplines and provide comprehensive insights into the topic.

Regarding research question 1, we found that whereas researchers have provided valuable insights into barriers, facilitators, and strategies with regard to the adoption stage and the implementation stage, few studies provide insights into the stage of institutionalization. Furthermore, most studies have focused on only one of the three stages at only one of the three levels of analysis, which indicates opportunities for multi-level and multi-phase research on the diffusion of e-participation in public administrations. Based on the findings, we developed an agenda for future research to answer research question 2. Particularly, we discuss research gaps related to (a) the institutionalization stage, (b) micro-level research, (c) the diffusion process, (d) multi-level research, and (e) research on strategic actions.

Overall, we are certain that our systematic literature review of studies on the diffusion of e-participation in public administrations can contribute to a greater cross-disciplinary communication about the topic. We believe, similar to Bannister and Connolly's (2015) assessment of the fragmentation of e-government research, that the multi-disciplinary perspectives on e-participation in public administrations are both a blessing and a curse: On the one hand, the multi-disciplinary perspectives contribute to a more comprehensive understanding of the diffusion process. On the other hand, it may also impede communication between e-participation researchers. Yet, based on our reading of studies from various disciplines, we believe that the actual differences between the disciplines are often smaller than one may think and that the shared interest in the phenomenon of e-participation diffusion can help to overcome the disciplinary boundaries. Systematizing the area of e-participation research will hopefully help scholars to build on the broad but fragmented body of existing studies.

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Appendix 1 Keywords used in the search process

"e-participation" OR "eParticipation" OR "online-participation" OR "e-democracy" OR "eDemocracy" OR "social media"

AND

"public administration" OR administrative OR municipal OR "public organization*" OR "public authorit*" OR "public management" OR bureaucra**

AND

adopt OR implement* OR institutionali* OR sustainabil* OR routiniz* OR enact* OR diffus* OR adapt* OR design OR accept* OR resist* OR change OR reform OR innovat* OR identity OR manage* OR value* OR motiv* OR behavior*

Appendix 2 Complete list of selected articles

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